

Remarks

The Applicants have amended the Specification to correct minor typographical and grammatical errors. No new matter has been added. The Applicants submit new Figs. 1 and 2 to replace those now of record. The new Figures correct clerical errors in the abscissa.

Claim 1 has been amended for grammatical reasons, to remove the European-style “characterized in that” language and to incorporate the subject matter of Claim 4. Claim 4 has been cancelled.

Claim 5 has been amended into independent form. Claim 8 has been amended to remove an improper multiple dependency. Other minor clarifying amendments have been made to Claims 1, 3, 5 and 6.

The Applicants acknowledge the rejection of Claims 1 – 8 under 35 U.S.C. §103 over JP ‘103. The Applicants respectfully submit that JP ‘103 is inapplicable to all of Claims 1 – 8 for the reasons set forth below in detail. However, the Applicants note with appreciation the Examiner’s frank acknowledgment that JP ‘103 does not disclose specifically claimed portions of all of Claims 1 – 8 in the paragraph spanning pages 2 – 3 of the Official Action.

One characteristic of this invention is to produce coke for metallurgy with the use of a coal blend prepared by blending 60 – 95 wt% of medium coking coal of middle coalification degree and low fluidity having a content of inert component of not less than 30%.

Generally, it has been known that a coal blend containing a large quantity of medium coking coal of middle coalification degree and low fluidity having a high content of inert component has a high non-melting component and, as a result, melting of coal particles becomes insufficient to form a lump. Hence, coke hardness is lowered.

In sharp contrast, this invention obtains high strength coke by blending a middle coking coal having a high content of inert component with a “hard coking coal and/or medium coking coal” having a “high coalification degree” even with coal having a much content of inert component, as powder coal without modling, even in the case of blending a great quantity of coal.

To the contrary, JP ‘103 (Miyatsu et al.) discloses several particular types of coals, but never refers to the inert component of medium coking coal having a middle coalification degree and low fluidity at all, and never discloses a method of avoiding any harmful influence when a great quantity of this medium coking coal is blended. JP ‘103 requires further addition of briquetted coal and a binder to a coal blend consisting of a plurality of coals. Hence, JP ‘103 is different from this invention which does not require such addition. Therefore, this invention is anything but obvious over JP ‘103.

Further, with respect to Claim 1, the Applicants note that the method recites blending a plurality of raw coals to form a coal blend. The Applicants respectfully submit that JP ‘103 fails to teach or suggest blending a plurality of raw coals. JP ‘103 discloses a blended coal that may be utilized as high strength coke production for metallurgy. The blended coal contains 100 parts by weight of coal having greater than 0.8% mean coalification degree; 5 – 20 parts by weight of refined coal, reformed coal and artificial coal; and 5 – 15 wt% of a binder. 20 – 40 parts by weight of the coal having greater than 0.8% mean coalification degree and the 5 – 20 parts by weight of refined coal, reformed coal and artificial bituminous coal is blended with the 5 – 15 wt% binder and formed into briquettes. The briquettes are then mixed with the remaining portion of the blended coal.

It is clear from the disclosure of JP '103 that only one raw coal is employed for blending purposes. This is the 100 parts by weight of coal having greater than 0.8% mean coalification degree. The remaining components of the blended coal, namely the 5 – 20 parts by weight of refined coal, reformed coal and artificial bituminous coal, as well as the 5 – 15 wt% binder, do not constitute raw coals. It therefore becomes clear that the objective of JP '103 is quite different from the objective of Claim 1, wherein a plurality of raw coals are used. In sharp contrast, JP '103 employs completely different measures to obtain blended coal. In particular, JP '103 looks to specialized types of coal, such as refined coal, reformed coal and artificial bituminous coal, as well as the rather extreme use of a binder to achieve a particularized blended coal. Claim 1 does not do this. Claim 1 uses a plurality of raw coals that is neither taught nor suggested by JP '103.

In rejecting claims under §103, the prior art must provide teachings or suggestions to those of ordinary skill in the art to make modifications to the reference (in this case, JP '103) and one of ordinary skill in the art should have a reasonable expectation of success upon making such modifications. JP '103 contains no such teachings or suggestions and, inherently, does not provide one of ordinary skill in the art with a reasonable expectation of success.

As noted above, JP '103 takes special measures to utilize different types of specialized materials to form a blended coal in combination with 100 parts by weight of coal having greater than 0.8 mean coalification degree. This is not the case in the invention, wherein a plurality of raw coals are employed. On this basis alone, the Applicants respectfully submit that Claim 1 readily distinguishes over JP '103.

In any event, JP '103 fails to teach or suggest utilizing 60~95 wt% of medium coking coal having a content of inert component of not less than 30%, a middle coalification degree and low fluidity, and 5~40 wt% of a high coalification hard coking coal and/or a high coalification

medium coking coal having a coalification degree higher than that of the middle coalification degree and low fluidity medium coking coal. As frankly acknowledged by the Examiner, these claimed portions of Claim 1 are simply not recited. Moreover, the Applicants respectfully submit that there are no teachings or suggestions to those of ordinary skill in the art to modify JP '103 in a way that would utilize 60~95 wt% of medium coking coal having a content of inert component of not less than 30%, a middle coalification degree and low fluidity, and 5~40 wt% of a high coalification hard coking coal and/or a high coalification medium coking coal having a coalification degree higher than that of the middle coalification degree and low fluidity medium coking coal. The Applicants ask the question as to where are the teachings or suggestions to make the modifications? It is not enough that the disclosure of JP '103 could be modified. Virtually any disclosure about anything can be modified. What is critical, however, is that there are teachings or suggestions in JP '103 that would cause one of ordinary skill in the art to make modifications. JP '103 is utterly devoid of such teachings or suggestions.

In fact, the Applicants respectfully submit that the focus of JP '103 is in a direction far afield of that of the Applicants' Claim 1 because JP '103 uses specialized materials such as refined coal, reformed coal, artificial bituminous coal and binders. The Applicants have simplified the formation of blended coal and proceeded in the opposite direction and not used such specialized components. Thus, JP '103 simply does not provide the teachings or suggestions to one of ordinary skill in the art to make modifications, much less modifications of a particular kind, wherein such modifications would lead one of ordinary skill in the art to the invention as recited in Claim 1. Withdrawal of the rejection as it applies to Claim 1 is respectfully requested.

With respect to Claim 2, there is, again, utterly no disclosure in JP '103 that would cause one of ordinary skill in the art to make modifications that would cause the use of an equilibrium moisture content of not less than 3.5%. In fact, the Applicants respectfully submit that JP '103 fails to disclose, teach or suggest anything concerning the equilibrium moisture content, much less the claimed amount of not less than 3.5%. As a consequence, the Applicants respectfully submit that JP '103 is non-enabling with respect to its possible application against Claim 2. Specifically, JP '103 does not mention equilibrium moisture contents at all. The Applicants ask the question as to how would one of ordinary skill in the art know to utilize an equilibrium moisture content of not less than 3.5% when the reference fails to mention equilibrium moisture content at all? The answer is that such a person would not know because JP '103 is non-enabling. Withdrawal of the rejection as it applies to Claim 2 is respectfully requested.

Claim 3 is patentable over JP '103 for the same reasons set forth above with respect to Claim 1. There are simply no teachings or suggestions to one of ordinary skill in the art to make any modifications to JP '103 at all, much less make modifications to the components of the coal blend of JP '103 that would result in the subject matter of Claim 3. Withdrawal of the rejection of Claim 3 is also respectfully requested.

The Applicants respectfully submit that JP '103 does not apply to Claim 5. Claim 5 recites that the coal blend "consists of" specified amounts of medium coking coal and specified amounts of hard coking coal. The Applicants respectfully submit that JP '103 teaches in the opposite direction. JP '103 teaches utilization of a specific amount of coal having greater than 0.8 mean coalification degree, 5 – 20 parts by weight of refined coal, reformed coal and artificial bituminous coal and 5 – 15 wt% of binder. This is far afield of a coal blend that "consists of" medium coking coal and hard coking coal having particular characteristics. In

other words, Claim 5 excludes the presence of refined coal, reformed coal and artificial bituminous coal, as well as binder. As a consequence, the Applicants respectfully submit that Claim 5 is patentable over JP '103. Withdrawal of the rejection of those claims is respectfully requested.

Claims 6 and 7 are patentable for the same reasons as set forth above with respect to Claim 5. Withdrawal of the rejection of those claims is respectfully requested.

The Applicants respectfully submit that Claim 8 is also patentable over JP '103. Claim 8 recites that the coke as a product has a tumbler strength of not less than 83%. JP '103 fails to disclose, teach or suggest this. As a consequence, JP '103 is non-enabling since it fails to disclose, teach or suggest any tumbler strength, much less a tumbler strength of not less than 83%. Withdrawal of the rejection of Claim 8 is respectfully requested.

In light of the foregoing, the Applicants respectfully submit that the entire Application is now in condition for allowance, which is respectfully requested.

Respectfully submitted,



T. Daniel Christenbury
Reg. No. 31,750

TDC:lh
(215) 656-3381